

# **PRESENTATION TO THE BOARD OF DIRECTORS ELEPHANT BUTTE IRRIGATION DISTRICT**

## **ENVIRONMENTAL IMPACT STATEMENT FOR CHANGES IN OPERATION AND MAINTENANCE OF THE RIO GRANDE CANALIZATION PROJECT**

- EIS developments
- Alternatives to be included in evaluation
- Implementation strategy  
[water use & conservation issues]
- Q&A

Prepared by

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International Boundary and Water Commission  
and  
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### ***Rio Grande Canalization Project:***

- 106-mile flood control and water delivery project (Percha Dam to El Paso)
- Nearly 151 miles of levees confine a floodway of over 8,000 acres
- USIBWC management includes annual mowing and pilot channel maintenance

## **EIS DEVELOPMENTS**

1. Memorandum of Understanding with SWEC signed March 1999
2. Consultation Process
  - Public scoping meetings (Oct 1999)
  - Technical workshops (Sep 2000, Jun-Oct 2001)
  - Public presentation of alternatives (Oct 2000)
  - Presentation to EBID & EPCWID#1 prior to Draft EIS preparation*
  - 45-day public review meeting following Draft EIS completion
3. Alternatives Formulation Report completed March 2001 (USIBWC website)
  - Five alternatives proposed, one selected as preferred alternative
  - Integrated USIBWC Land Management Alternative: all actions within ROW
4. SWEC stated concerns (Jun-Nov 2001 correspondence)
  - Proposed options too restricted by practical considerations
  - More emphasis needed on restoration by "natural" processes
  - No justification for a pre-determined alternative
5. Partial restoration alternative was developed taking into account that:
  - Must comply with flood control & water delivery requirements
  - Must address hydrologic, geomorphic and legal constraints (flow regulation, land & water rights, multi-agency jurisdiction)
6. Next steps: Draft EIS based on four alternatives and public and agency review meeting, Final EIS addressing comments, and Record of Decision.

### **ALTERNATIVES**

1. No Action (current O&M continued)
2. Modified O&M and Flood Control Improvements
3. Integrated USIBWC Land Management
4. Targeted Stream Restoration

## ALTERNATIVE 2 MODIFIED O&M AND FLOOD CONTROL IMPROVEMENTS

### Flood Control Conditions

- Control is effective but deficiencies must be addressed (*per USIBWC mission*)
- Flood containment capacity was estimated based on hydraulic modeling
- Vegetation on floodway does not significantly reduce containment capacity
- Structural deficiencies under evaluation (3-year program)

### Proposed Actions

- Flood control assumption for EIS: Containment deficiencies will be addressed by raising levees (55 miles) and addition of levees or floodwalls (9 miles)
- Reevaluate flood control strategy once structural deficiencies are documented
- Complete siphon protection structures
- Sediment management: modify dredging at arroyos and pilot channel (erosion control), and identify spoil disposal locations outside floodway
- Expand/create wetlands (36 acres)

## ALTERNATIVE 3 INTEGRATED USIBWC LAND MANAGEMENT

- All actions within the right-of-way (USIBWC's jurisdiction & resources)
- Enhance 25% of floodway habitat (48 sites identified) and extensive salt cedar control
- Modifications to aquatic habitat (re-open meanders, placement of habitat structures)

Alternative 3 Proposed Actions	Units	Estimate
<b>Aquatic Habitat Improvement</b>		
Modify dredging practices at arroyos		
Reopen meanders within ROW (eight)	acre	109
Create/expand wetlands	acre	92
Habitat structures		
* Embayments within ROW (at drains)	number	38
* Additional groin locations	number	18
* Additional weirs	number	4
Widen pilot channel	acre	16
<b>Riparian Corridor Improvement</b>		
Additional no-mow zones	acre	488
Existing riparian bosque management	acre	574
Control invasive vegetation	acre	1,062
Reduced spillway maintenance	acre	154
Uplands management (reduce grazing)	acre	1,126

## ALTERNATIVE 4 TARGETED STREAM RESTORATION

*Goal:* promote riparian corridor development and diversify aquatic habitat

- More extensive salt cedar control (relative to Alt. 3)
- Additional no-mow zones for riparian corridor development
- Bank reconfiguration (selective riprap removal and shave downs)
- Increase in riparian native vegetation outside ROW (mostly in Seldon Canyon)
- Voluntary conservation easements outside ROW

*Controlled releases from Caballo Dam were considered to support riparian corridor.*

- Long-term transition from planting sites already developed using irrigation techniques or bank reconfiguration (Rincon Valley and Seldon Canyon).
- Evaluated by mapping low, floodable areas using hydraulic modeling (theoretical discharges up to 5,000 cfs --includes irrigation flows--)

	River Mile	Acres at 3,000 cfs	Acres at 4,000 cfs	Acres at 5,000 cfs
Percha Dam to Rincon Siphon	105-83	60	103	149
Rincon Siphon to Tonuco Bridge	83-74	69	116	272
Tonuco Bridge to Leasburg Dam	74-63	181	334	453
<b>TOTAL</b>		<b>310</b>	<b>553</b>	<b>874</b>

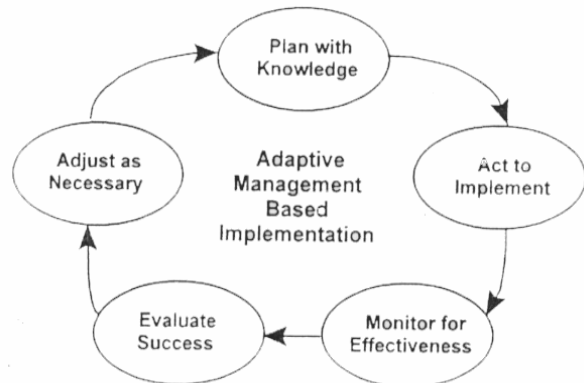
### Comparison of Proposed Actions for Alternatives 3 and 4

Proposed Actions	Units	Alt. 3	Alt. 4
<b>Aquatic Habitat Improvement</b>			
Modify dredging practices at arroyos			
Reopen meanders within ROW (eight)	acre	109	109
Create/expand wetlands	acre	92	<b>151</b>
Habitat structures	number	60	<b>38</b>
Widen pilot channel	acre	16	--
<b>Selective riprap removal (10 arroyos)</b>	feet	--	<b>3,000</b>
<b>Riparian Corridor Improvement</b>			
Additional no-mow zones		488	646
Existing riparian bosque management	acre	574	<b>582</b>
Control invasive vegetation	acre	1,062	<b>1,363</b>
Reduced spillway maintenance	acre	154	154
Uplands management (reduce grazing)	acre	1,126	1,126
<b>Bank reconfiguration and flooding</b>	acre	--	<b>33</b>
<b>Expand riparian vegetation outside ROW</b>	acre	--	<b>135</b>
<b>Add conservation easements (outside ROW)</b>	acre	--	<b>944</b>
<b>Controlled releases from Caballo Dam</b>	event	--	<b>1 in 3 yrs</b>

## IMPLEMENTATION STRATEGY

### Key Elements

- Water secured from *conservation programs* (salt cedar control & improved irrigation)
- Emphasis placed on *not decommissioning agricultural lands* (most actions within ROW)
- Future re-evaluation of flood control strategy
- Long-term program gradually implemented (with independent technical oversight)
- Flexible approach responds to available resources and documented results  
[*Adaptive Management Strategy*]



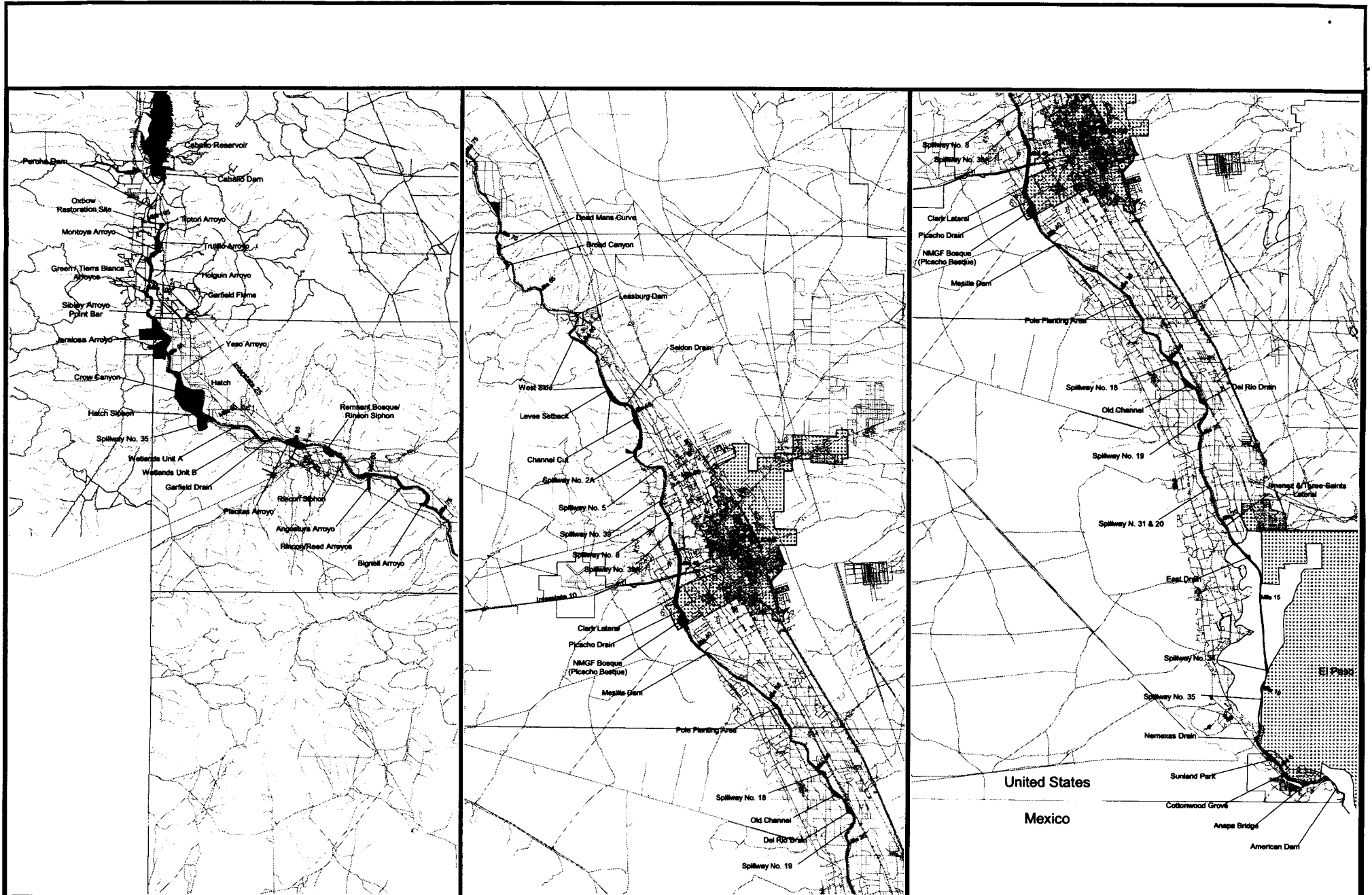
### Water Conservation

- Salt cedar control to provide 50% or more of annual water requirements (2,400 to 3,800 ac-ft)
- Studies would assess viability/costs of further increasing efficiency of conveyance and/or application systems (paid by restoration program & scoped in conjunction with irrigation districts)
- Results of conservation measures paid by the restoration program would be quantified, and net water gains shared with agricultural community
- Assuming an efficiency increase of 12% can be achieved, the water deficit could be met by improved irrigation in 1,600 to 4,000 acres of agricultural lands (Alternatives 3 and 4, resp.)

### Estimated Water Use by Modified O&M Program

Actions	PROPOSED ACTION		ANNUAL WATER USE		
	Alt. 3 (acres)	Alt. 4 (acres)	Unit Rate (ac-ft/ac)	Alt. 3 (acres)	Alt. 4 (acres)
<b>Aquatic Habitat Improvement</b>					
Create/expand wetlands	92	151	5.0	460	755
Reopen meanders within ROW (eight)	109	109	4.5	491	491
Widen pilot channel	16	--	4.5	72	0
<b>Vegetation Corridor Improvement</b>					
Additional no-mow zones					
* Managed grasslands	239	270	1.0	239	270
* Expand riparian vegetation within ROW	249	376	3.5	872	1,316
Reduced spillway maintenance	154	154	1.5	231	231
Bank reconfiguration and flooding	--	33	4.5	0	149
Expand riparian vegetation outside ROW	--	135	4.5	0	608
Add conservation easements (outside ROW)	--	944	0.0	0	0
<b>Subtotal Water Use*</b>				2,364	3,819
<b>Water Conservation Program</b>					
Salt cedar control	1,062	1,363	-1.5	-1,593	-2,045
Irrigation efficiency improvement program (0.5 ac-ft/ac, or 12% of a 4 ft annual allocation)	1,600	4,000	-0.5	-800	-2,000

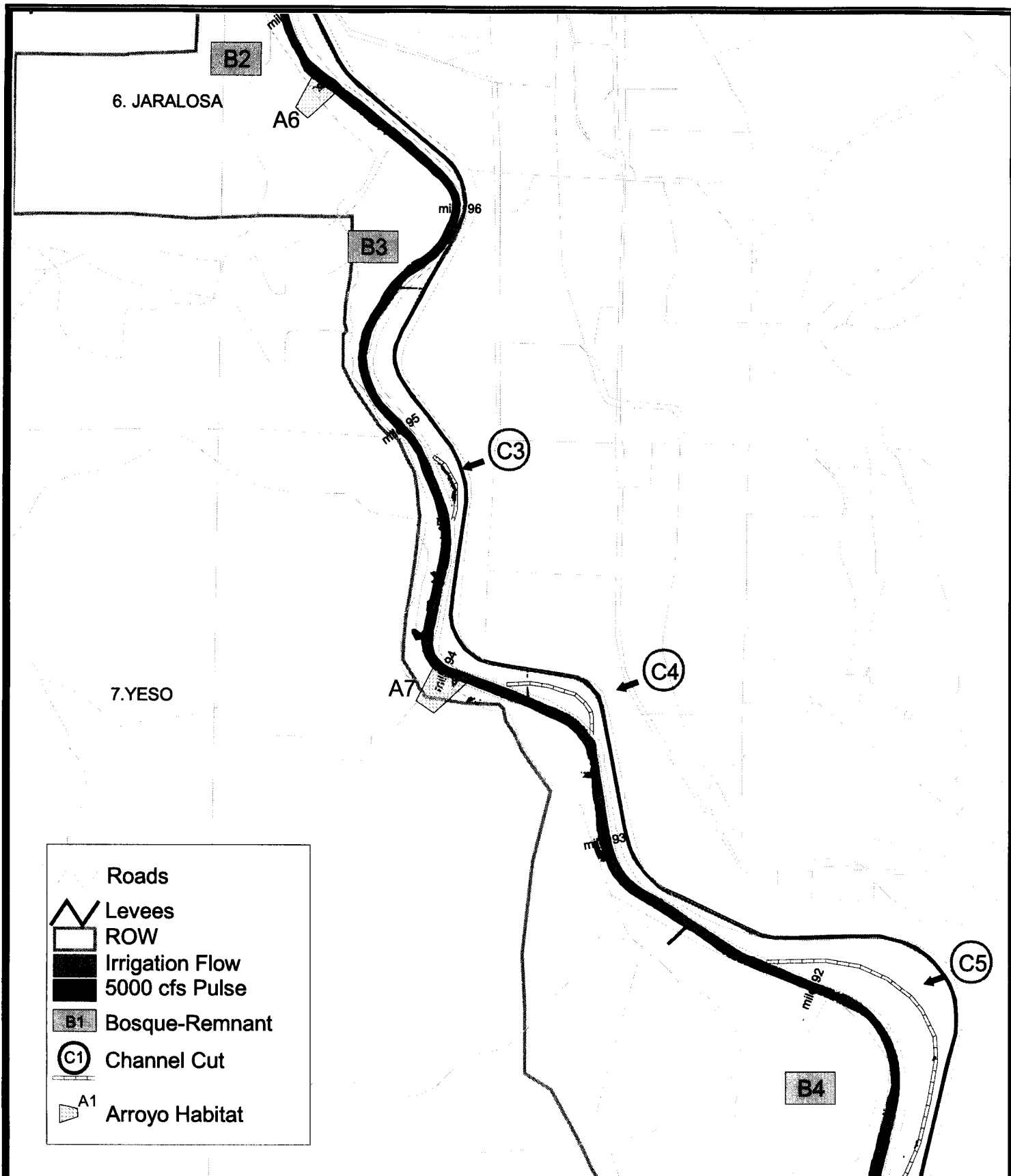
\* For Alt. 4, a controlled release would add 1,600 ac-ft/yr assuming a 1-day release every 3 years at 4,000 cfs (2,400 cfs above normal irrigation flows; 1 cfs per day = 2 ac-ft)



**Figure 2.5**

**Environmental Enhancement Sites**

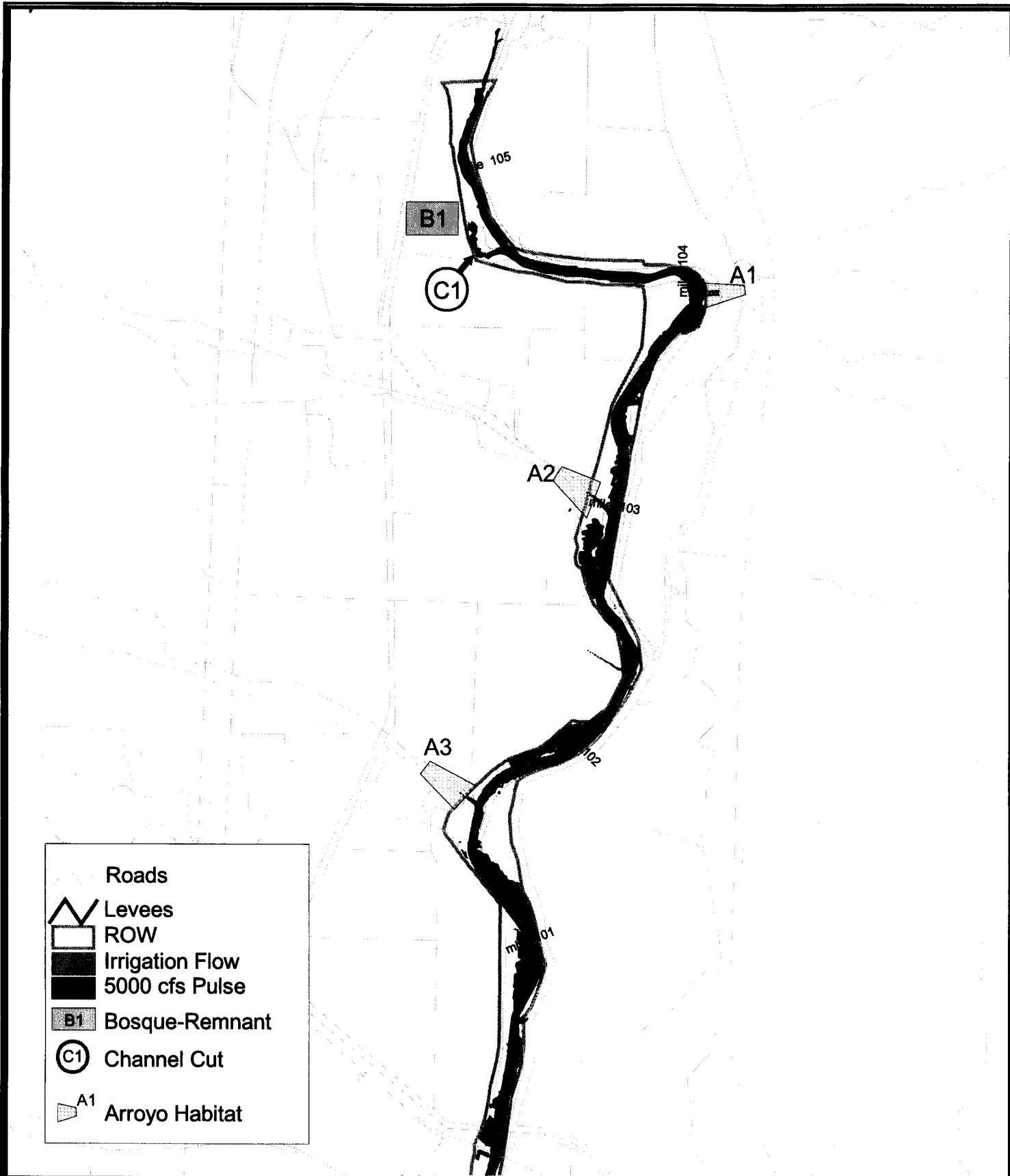
**Rio Grande Canalization Project**



**Figure 2.9**

**Example of Proposed  
Aquatic Habitat Diversification**

**Rio Grande Canalization Project**



**Figure 2.8**

Example of Riparian Bosque Restoration  
Potential by Overbank Flooding

Rio Grande Canalization Project

0.5 0 0.5 1 Miles